



**UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/272,303	03/19/99	TOMARU	32307-147486

IM52/1023
VENABLE BAETJER HOWARD & CIVILETTI
1201 NEW YORK AVENUE NW
SUITE 1000
WASHINGTON DC 20005

EXAMINER	
ANGEBRANDT, M	
ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 10/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Applicant(s)

09/272,303

Applicant(s)

TOMARU ET AL.

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/2/2001, 3/21/2001 & 8/1/2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 & 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There is no disclosure of how to make the monomers embraced by the scope of claims 7 and 8. This may be a fatal flaw in the application.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language of claims 7 and 8 indicate that each includes an epoxy ring, but the definition of these as being one of " C_mX_{2m+1} or $C_6X_5-nY_n$ " does not include oxygen which is necessary for the formation of an epoxy ring. This may be a fatal flaw in the application as there are no exemplified compounds or other disclosure upon which to base clarification of the language.

Also claims 7 and 8 need to include a photopolymerization initiator in the composition used to form the cladding.

The compounds of formulae I or II are not oligomers, but rather monomers.

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukamoto et al. '715, in view of Fan et al. EP 0446672.

Tsukamoto et al. '715 teaches the use in the 11th embodiment, the formation of a photosensitive on a substrate followed by imagewise exposure using a mask. The use of epoxy compositions is disclosed, including EHPE-3150 which is embraced by formula I (21/43-61). In the case of the cited figures air or the substrate which each have a lower refractive index than the waveguide materials act in place of cladding layers. Photoinitiators useful with epoxies are disclosed. (23/30-67) The use of cladding materials is disclosed. (16/42-47) The use of solvent development is disclosed. (20/29-52).

Fan et al. EP 0446672 teaches with respect to figures 3a-e, the coating of a cladding layer, the formation of a waveguiding core using a photosensitive polymer in selected areas and the overcoating with an upper cladding layer. (12/10-44) The cladding layer are disclosed as having a lower refractive index than the waveguiding core. The use of the photosensitive epoxy epirez su8 for the waveguiding core and the use of epoxy functionalized PMMA for the cladding is disclosed. (12/37-40) As discussed in the first example, the use of spin coating for coating the photosensitive waveguiding core and the use of lithographic patterning for the exposure are disclosed (10/40-47, 10/47-53). The use of solvent development to remove undesired

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photosensitive material to form the ridge core is disclosed. (11/10-19). The teachings with respect to figure 2 are similar, but do not use the solvent development step.

It would have been obvious to one skilled in the art to modify the process of examples 17 of Tsukamoto et al. '715 by using epoxies known to be useful a waveguiding cores, such as EPHE-3150 and to develop them using solvents to remove the uncured portions of the epoxy waveguiding layer, such as those taught in Fan et al. EP 0446672 and to use cladding layer below and above the waveguiding core as taught by Fan et al. EP 0446672, based upon the disclosure of equivalence within the references between the solvent development and refractive index distribution techniques and the various waveguiding materials and the direction to the use of cladding layers within Tsukamoto et al. '715.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP 62-135467 and JP 09-124767 each teach epoxy compounds embraced by formula I.

CAS on-line establishes that the compound of formula I is embraces compositions known under the trade names Celloxide 3150 and EHPE 3150.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

A handwritten signature in black ink, appearing to read 'M. Angebranndt', written in a cursive style.

Martin J Angebranndt
Primary Examiner
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October 17, 2001